Supplementary Information

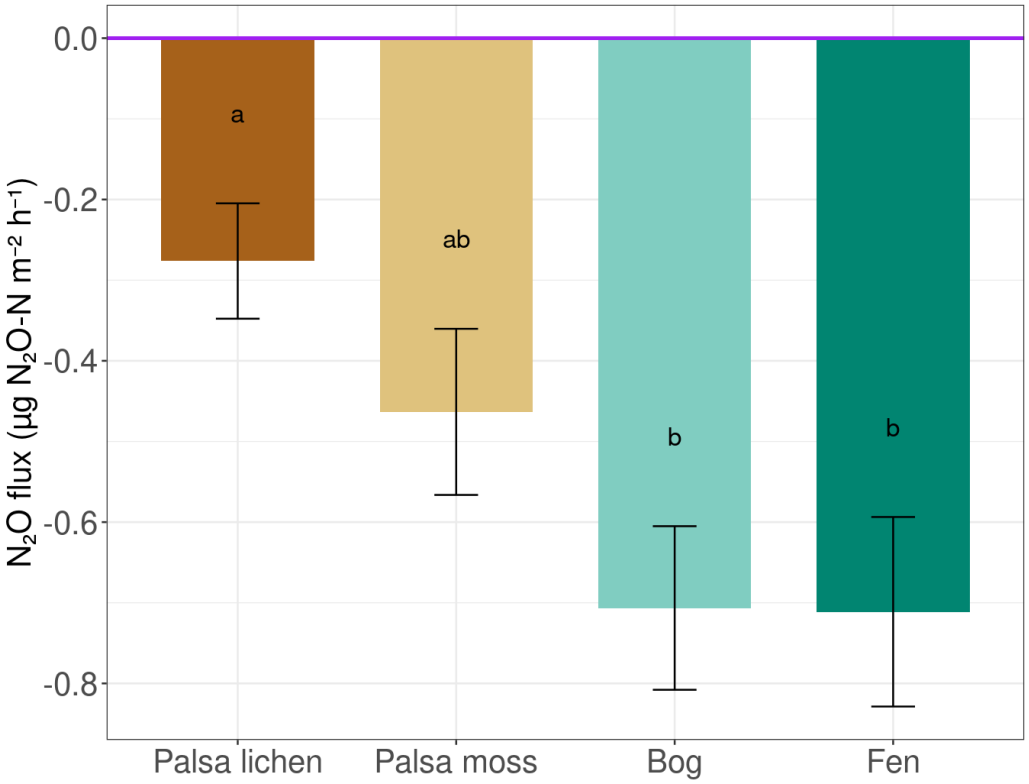

Figure S1: N_2O flux over all measurement campaigns and micro habitats, excluding one hot spot (n=?). Letters indicate significance according to ANOVA and Tukey HSD post-hoc tests, with differing letters between micro habitats indicating significant differences. The purple horizontal line indicates the border between a source (positive values) and sink (negative values).

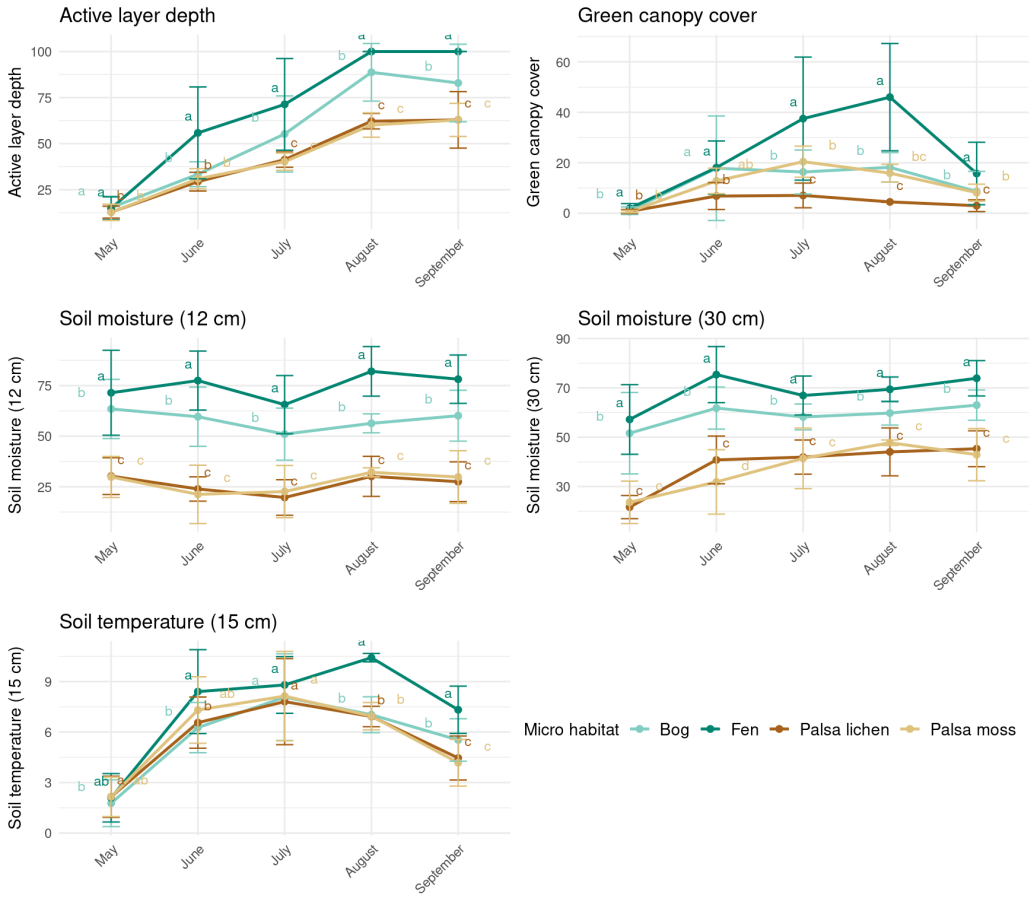

Figure S2: Monthly means (error bars indicating ± standard deviation) of active layer depth, green canopy cover, soil moisture at 12 cm and 30 cm, and soil temperature at 15 cm between May and September, divided into palsa lichen, palsa moss, bog, and fen habitats. Group letters (a,b,c,...) indicate statistically significant differences to other micro habitats (ANOVA and Tukey HSD post-hoc test, $p < 0.05$).

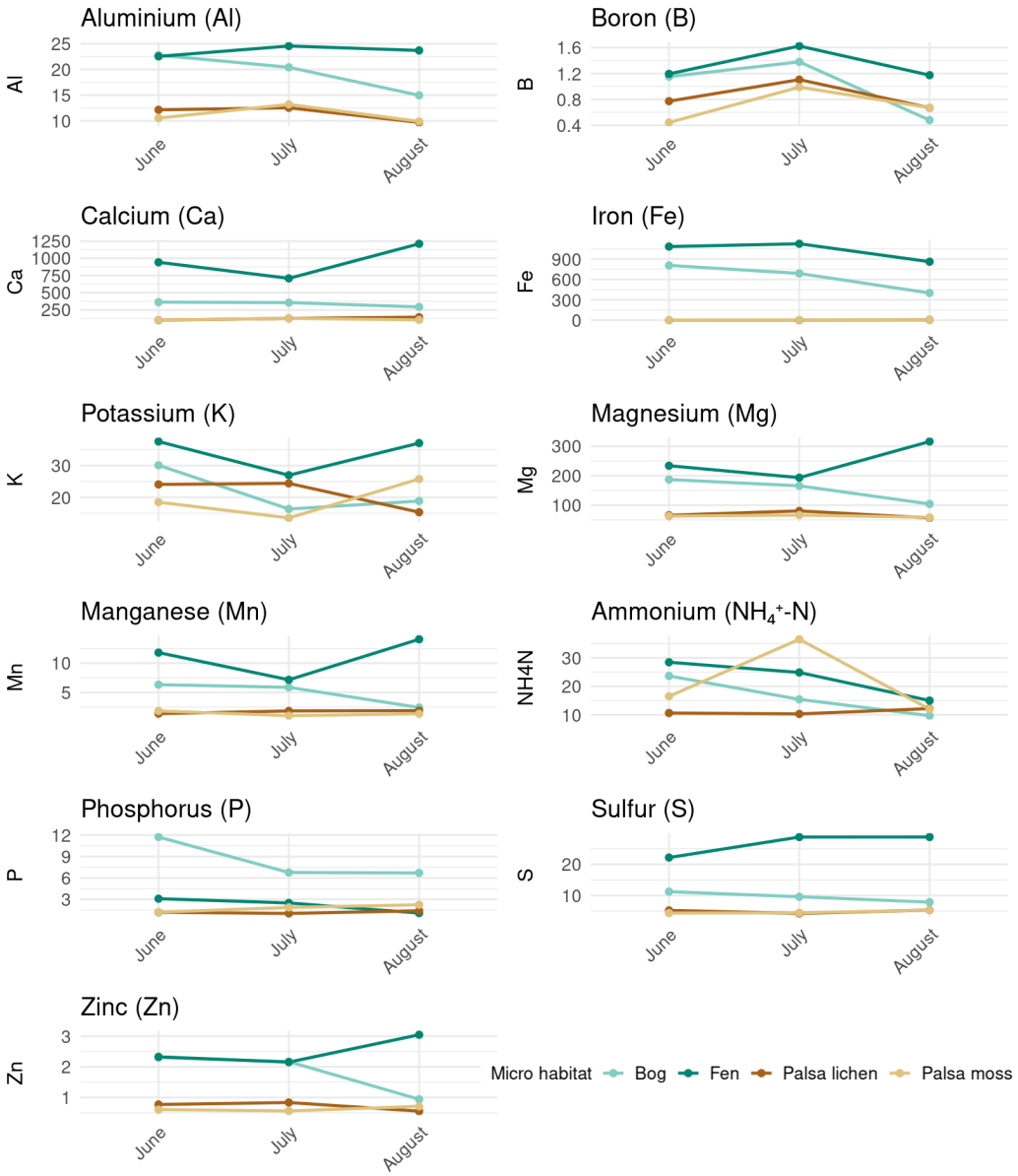

Figure S3: Nutrient values of aluminium (Al), boron (B), calcium (Ca), iron (Fe), potassium (K), magnesium (Mg), Manganese (Mn), Ammonium (NH_4^+), phosphorus (P), sulfur (S) and zinc (Zn) per micro habitat in μg nutrient / 10 cm^3 / burial time (3 weeks).

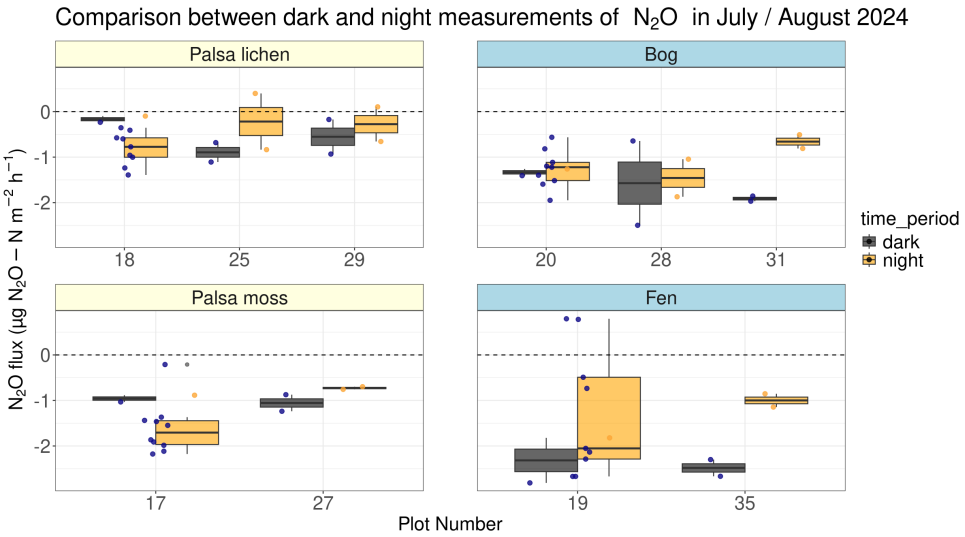

Figure S4: Comparison between night and dark measurements per micro-habitat. Box plots show dark measurements (during day time with a non-transparent tarpaulin cover) in grey and night time measurements in orange (without a non-transparent tarpaulin cover). Individual data is shown in coloured points around the boxplots (jitter).

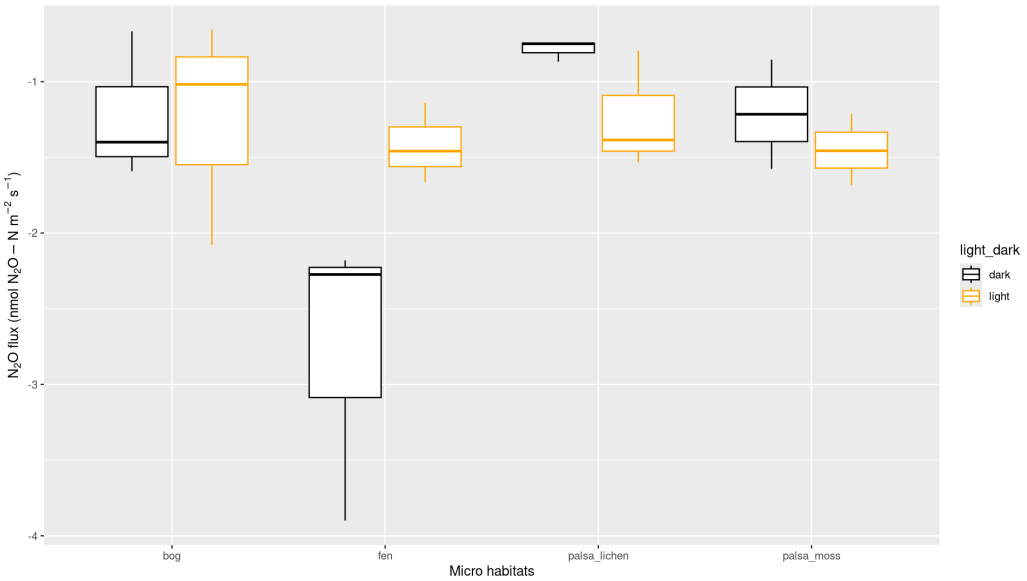

Figure S5: Storflakket may currently be wrong

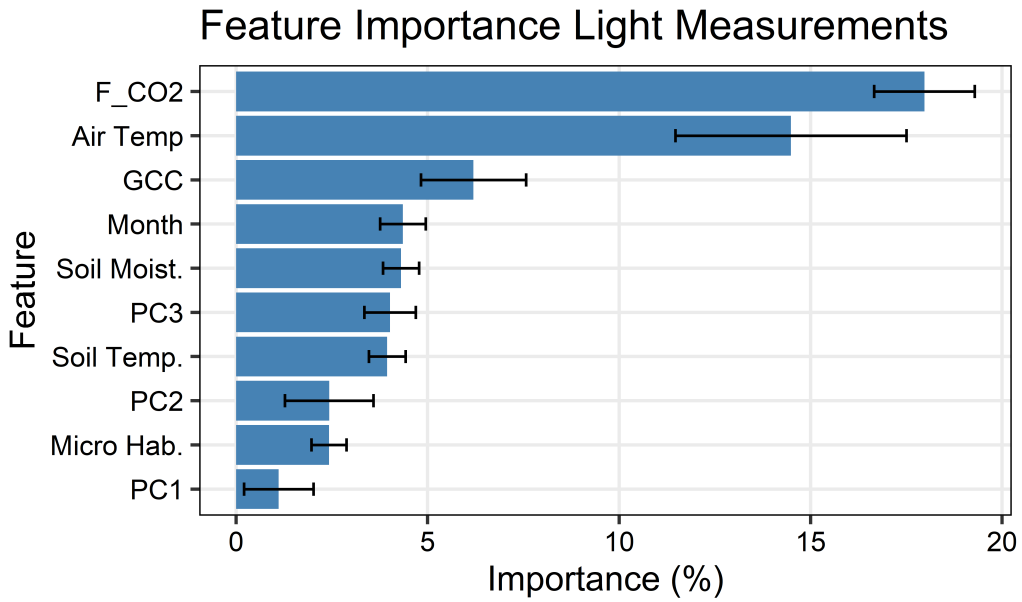

Figure S6: Importance of environmental variables ("features") **and nutrients during light measurements**, with F_CO2 = NEE, Air Temp. = air temperature, Month = measurement campaign month, Soil Moist. = soil moisture, PAR = photosynthetically active radiation, GCC = green canopy cover, Micro Hab. = micro habitat, and Soil Temp. = soil temperature

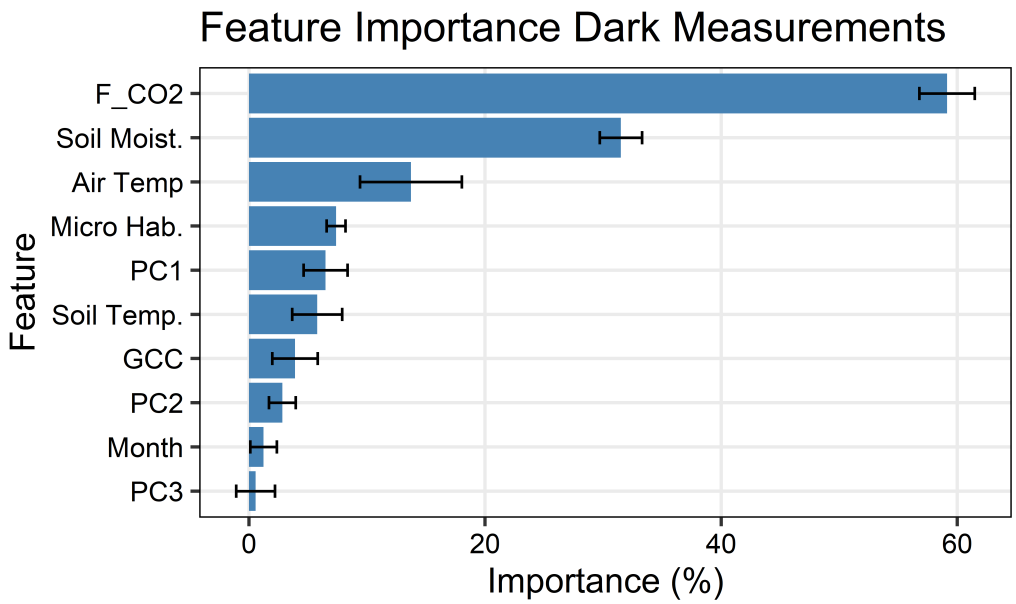

Figure S7: Importance of environmental variables ("features") **and nutrients during dark measurements**, with F_CO2 = NEE, Air Temp. = air temperature, Month = measurement campaign month, Soil Moist. = soil moisture, PAR = photosynthetically active radiation, GCC = green canopy cover, Micro Hab. = micro habitat, and Soil Temp. = soil temperature

Table S1: Number of replicates per plot_no, micro habitat, and exact coordinates of the final 24 chamber base position

Transect	Plot	Micro habitat	n replicates	Y coordinate	X coordinate
1	2	Palsa lichen	58	68.35588	19.04357
1	7	Bog	59	68.35595	19.04360
1	8	Palsa moss	79	68.35601	19.04387
1	10	Fen	62	68.35601	19.04411
1	11	Palsa lichen	72	68.35604	19.04403
1	12	Bog	72	68.35606	19.04402
2	15	Palsa moss	58	68.35597	19.04599
2	17	Palsa moss	62	68.35608	19.04625
2	18	Palsa lichen	62	68.35610	19.04619
2	19	Fen	76	68.35607	19.04681
2	20	Bog	76	68.35612	19.04652
2	23	Fen	57	68.35619	19.04701
3	25	Palsa lichen	52	68.35770	19.05122
3	26	Bog	48	68.35771	19.05117
3	27	Palsa moss	48	68.35771	19.05109
3	28	Bog	56	68.35760	19.05101
3	29	Palsa lichen	48	68.35763	19.05102
3	30	Palsa moss	41	68.35761	19.05116
3	31	Bog	55	68.35763	19.05152
3	32	Palsa moss	46	68.35766	19.05167
3	33	Palsa lichen	46	68.35767	19.05174
3	34	Fen	49	68.35793	19.05116
3	35	Fen	38	68.35801	19.05128
3	36	Fen	34	68.35806	19.05139